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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,066	11/16/2001	Ronak Patel	FOUND-0009	7739

49680 7590 07/14/2006

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EXAMINER

MEW, KEVIN D

ART UNIT	PAPER NUMBER
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2616

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,066

Applicant(s)

PATEL ET AL.

Examiner

Kevin Mew

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 12-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/16/2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Detailed Action

1. Acknowledgement is made of the Group I, claims 1-12 elected for prosecution by applicant.

Specification

2. The abstract of the disclosure is objected to because the title of the instant application should not be included in the abstract page. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Bianchini Jr. et al. (USP 6,473,433).

Regarding claim 1, Bianchini discloses an administrative module (cell unstriper and memory controller, col. 5, lines 10-41) for use in a digital switch, wherein the digital switch (Fig. 2) includes a plurality of blades (a plurality of blades, 1XOC-48, Fig. 2) coupled to a switching fabric (fabric 1, fabric N and spare fabric, Fig. 2), and wherein each blade outputs serial data streams (each blade/vortex sends a 2.5 G cell stream into a dedicated striper ASIC, col. 7, lines 57-60) with in-band control information in multiple stripes (a plurality of stripes to fabric 1,

fabric N, and spare fabric, Fig. 2) to said switching fabric (fabric 1, fabric N and spare fabric, Fig. 2), said administrative module comprising:

a level monitor that monitors the data received at a receiving blade (the memory controller implements queuing/dequeuing mechanism that monitors cells received based on priority and blade/channel ID, col. 5, lines 27-35, col. 17, lines 14-24); and

a stripe synchronization error detector (unstriper) that detects a stripe synchronization error (detects fabric synchronization errors) based on the amount of data monitored by said level monitor (based on the synchronization flows monitored at the memory controller, col. 12, lines 17-29).

Regarding claim 2, Bianchini discloses the administrative module of claim 1, wherein the data received at a receiving blade is sorted based on stripe and source information and stored in a set of data structures (data received at a blade is sorted based on priority and blade/channel ID and stored in queues of shared memory, col. 17, lines 14-24), and wherein:

said level monitor monitors the levels of data stored in each data structure receiving blade (the memory controller implements queuing/dequeuing mechanism that monitors cells received based on priority and blade/channel ID, col. 5, lines 27-35), and

said stripe synchronization error detector detects at least one of an overflow and underflow condition in the amount of data received on a respective stripe from a particular source (the unstriper detects that one of the streams is forwarded off-chip and the stream is the faulty stripe and thus an underflow condition occurs, col. 6, lines 15-27).

Regarding claim 3, Bianchini discloses the administrative module of claim 1, further comprising:

a flow controller that initiates a recovery routine to re-synchronize data across the stripes in response to detection of a stripe synchronization error (automatic protection switching initiates a queue resynch routine to ensure the shared memory queues among the fabrics are in sync, APS, Table 23, col. 18, lines 6-12).

Regarding claim 4, Bianchini discloses the administrative module of claim 3, wherein said recovery routine includes throttling back the data flowing to one or more of said stripes (no traffic received after the resynch cell is drained until the queue resynch ends, col. 18, lines 4-11).

Regarding claim 6, Bianchini discloses the administrative module of claim 1, wherein said stripe-synchronization error detector detects a stripe synchronization error in response to any one or more of the following error conditions: an incoming link error (incoming stripe error, col. 6, lines 24-27), a cross-point failure, and an outgoing link error.

Regarding claim 7, Bianchini discloses a method for detecting stripe synchronization error in a network switch, comprising:

(a) sorting data received at a receiving slot based on stripe and source information (data received at a blade is sorted based on priority and blade/channel ID, col. 17, lines 14-24);

(b) storing the sorted data in a set of data structures (stored in queues of shared memory, col. 17, lines 14-24);

(c) monitoring the levels of data stored in each data structure (the memory controller implements queuing/dequeuing mechanism that monitors cells received based on priority and blade/channel ID, col. 5, lines 27-35, col. 17, lines 14-24); and

(d) detecting at least one of an overflow and underflow condition in the amount of data received on a respective stripe from a particular source (the unstriper detects that one of the streams is forwarded off-chip and the stream is the faulty stripe and thus an underflow condition occurs, col. 6, lines 15-27).

Regarding claim 8, Bianchini discloses the method of claim 7, wherein the source information identifies a slot (a channel) that sent the data across a switching fabric of the network switch (the source information contains a blade/channel ID that identifies the blade the sends data across the switching fabric, col. 17, lines 14-24).

Regarding claim 9, Bianchini discloses the method of claim 7, wherein the source information identifies a source packet processor (blade) that sent the data from a slot (a channel) across a switching fabric of the network switch (the source information contains a blade/channel ID that identifies the blade the sends data across the switching fabric, col. 17, lines 14-24).

Regarding claim 10, Bianchini discloses a method for maintaining synchronization of striped cell traffic, comprising the steps of:

(a) sending a common character in striped cells in all lanes (a resynch cell is broadcasting to all fabrics, col. 18, lines 6-16) for a predetermined number of cycles (for the calculated lockdown cycles, col. 18, lines 6-16);

(b) evaluating the common control characters received at stripe receive synchronization queues (the resynch cell is received at all the fabrics to make sure all the fabric queues are valid and in sync, col. 18, lines 1-7); and

(c) detecting when an in-sync condition is present that indicates the stripe receive synchronization queues have been cleared (at the end of the queue resynch, any left-over old traffic will be flushed, col. 18, lines 16-21).

Regarding claim 11, Bianchini discloses a method for managing out-of-synchronization traffic flow through a cross-point switch in a switching fabric, comprising:

(a) monitoring the level of stripe receive synchronization queues (the memory controller implements queuing/dequeuing mechanism that monitors cells received based on priority and blade/channel ID, col. 5, lines 27-35, col. 17, lines 14-24);

(b) determining whether an out-of-synchronization condition exists (unstriper detects synchronization errors based on the synchronization flows monitored at the memory controller, col. 12, lines 17-29); and

(c) initiating a re-synchronization routine when said out-of-synchronization condition exists (automatic protection switching initiates a queue resynch routine to ensure the shared memory queues among the fabrics are in sync, APS, Table 23, col. 18, lines 6-12).

Regarding claim 12, Bianchini discloses the method of claim 11, further comprising, after said initiating step (c), the steps of:

(d) sending a common character in striped cells in all lanes (a resynch cell is broadcasting to all fabrics, col. 18, lines 6-16) for a predetermined number of cycles (for the calculated lockdown cycles, col. 18, lines 6-16);

(e) evaluating the common control characters received at stripe receive synchronization queues (the resynch cell is received at all the fabrics to make sure all the fabric queues are valid and in sync, col. 18, lines 1-7); and

(f) detecting when an in-sync condition is present that indicates the stripe receive synchronization queues have been cleared (at the end of the queue resynch, any left-over old traffic will be flushed, col. 18, lines 16-21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bianchini Jr et al. in view of Ohira et al. (USP 6,721,268).

Regarding claim 5, Bianchini discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to explicitly show the administrative module of claim 1, further comprising:

a control character presence tracker that identifies the presence of a K2 character during the recovery routine.

However, Ohira discloses a ring-shaped multiplexed network wherein APS K2 bytes are included in the SONET frame transport overhead (col. 6, lines 29-40 and Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the switching system of Bianchini with the teaching of Ohira in using APS K2 bytes in the SONET frame transport overhead.

The motivation to do so is to provide automatic protection switching signaling and alarm transport until the transmission path recovers from the fault.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Seema S. Rao
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